

THE
NATURAL HISTORY
OF
BRITISH INSECTS.

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THE
NATURAL HISTORY
OF
BRITISH INSECTS;

EXPLAINING THEM
IN THEIR SEVERAL STATES,
WITH THE PERIODS OF THEIR TRANSFORMATIONS,
THEIR FOOD, ECONOMY, &c.

TOGETHER WITH THE
HISTORY OF SUCH MINUTE INSECTS
AS REQUIRE INVESTIGATION BY THE MICROSCOPE.

THE WHOLE ILLUSTRATED BY
COLOURED FIGURES,
DESIGNED AND EXECUTED FROM LIVING SPECIMENS.

BY E. DONOVAN.

VOL. XIII.

LONDON:

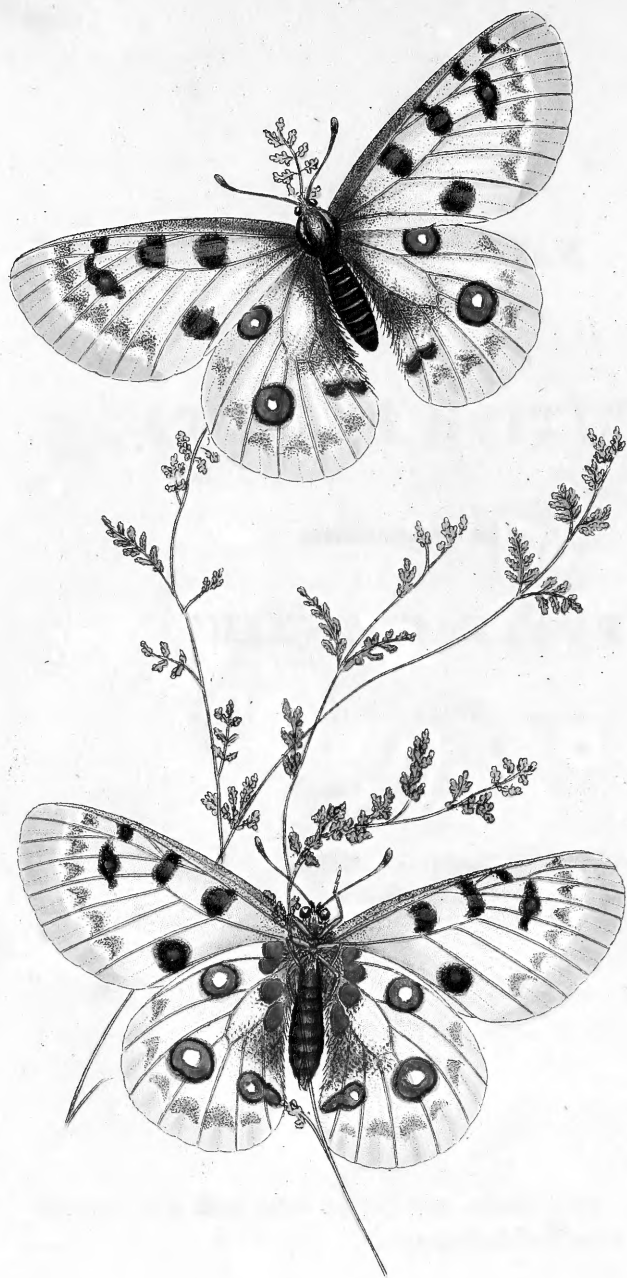
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THE
NATURAL HISTORY
OF
BRITISH INSECTS.

PLATE CCCCXXXIII.

PAPILIO APOLLO.

APOLLO BUTTERFLY.

GENERIC CHARACTER.

Antennæ terminating in a club: wings erect when at rest. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings entire, white spotted with black: lower ones with four red ocellated spots above and six beneath.

PAPILIO APOLLO : alis albis nigro maculatis : posterioribus supra ocellis quatuor, subtus sex basique rubris. *Linn. Fn. Suec.* 1032.—*It. gothl.* 230.

PAPILIO APOLLO. *Fabr. Inf.* 2. 35. n. 417. *Haworth. Lep. Brit.* 1. p. 29.

This large and very beautiful butterfly, is an inhabitant of various parts of Europe, and is found also in the more temperate parts of Siberia. We are induced to insert it among the British Papiliones on the assurance of Mr. Haworth, that he was recently informed the species had been taken in Scotland*. It would afford us much pleasure could the particulars of its capture be submitted to our readers, but we have been unable to procure any further information on this subject; and presuming the fact at least to be correctly stated, we could not refrain commencing our new volume with the representation of such an interesting object.

Papilio Apollo is the offspring of a solitary sluggish larva, or caterpillar, of a black colour, covered with a soft and silky down. All the rings are marked on both sides with two red spots, which together constitute a longitudinal series along each side. Besides these spots, every ring or joint is marked nearer the middle of the back with three small lateral dots of blueish, disposed in a semilunar manner, and thus forming a longitudinal waved line on each side within the two rows of red spots. The anterior part of the head is furnished with tentacula, which the animal can advance or retract at pleasure; this is furcated when completely spread out. The Pupa is slightly foliiculate, somewhat ovate, and of a blueish colour.

* *Haw. Lep. Prodr. Pref.* p. 29.



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PLATE CCCCXXXIV.

APIS PENNIPES.

PLUME LEGGED BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in the females subclavated: wings flat: sting of the females and neuters pungent and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Somewhat greyish and pubescent: middle legs tufted with long hairs.

APIS PENNIPES: pubescens subgrisea; pedibus secundariis elongatis crinito-pectinatis. *Lin. Nat. MS. in Syst. Nat.*

APIS RETUSA *mas.* Corpore *masculo* nigro, hirsuto-fulvo; ano nigricanti, pedibus intermediis elongatis, crinito-pectinatis. *Kirby Ap. Angl. v. 2. p. 296. n. 69.*

APIS PLUMIPES, hirsuta, pedum mediorum metatarsis scopa atra, postice pilis raris longis barbatis. *Schrank. Enum. Inf. Austr. n. 804.*

APIS PLUMIPES. *Pallas Spicil. Zool. 9. p. 24. tab. I. fig. 14.*

APIS PILIPES. *Christii Hymenopt. p. 131. tab. 8. fig. 9. mas.*

APIS HISPANICA. *Panz. Fn. Inf. Germ. Init. n. 55. tab. 6.*



This curious kind of bee appears to be described by several writers under the various names of *plumipes*, *pilipes*, and *pennipes*, in allusion to the remarkable tufts of long hairs upon the middle pair of legs, which contribute in such a striking manner both to the beauty and singular appearance of the species. Panzer describes it under the more local, and therefore more objectionable epithet of *hispanica*.

Mr. Kirby considers this as no other than the male sex of the Linnean species *refusa*, and notwithstanding the great dissimilarity which prevails between the two insects supposed to be male and female, there is reason to apprehend, according to the observations of Mr. Kirby, that they may be really of the same species: the evidence in favour of such an opinion affords a strong presumption of the fact, although it still remains to adduce in support of it, the testimony of those circumstances which we are taught to admit as the most convincing, and unerring proof.—It has been remarked, that when this insect makes its first appearance in the spring, the down of the upper side of the body, the vent excepted, is of a reddish yellow colour, and that latter in the year the hair becomes more cinereous.

This insect is very local; it is sometimes found in nests or cells constructed in old walls in pretty considerable numbers, but except in such situations is very scarce. The smallest figure denotes the natural size.

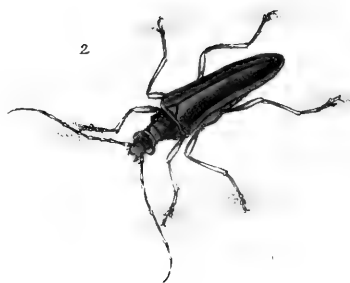


PLATE CCCCXXXV.

CERAMBYX SUTOR.

FIG. I.

COLEOPTERA.

GENERIC CHARACTER.

Antennæ fetaceous: feelers four: thorax spinous or gibbous: wing-veins linear.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings obtuse, deep black clouded with ferruginous; scutell pale yellow: antennæ very long.

CERAMBYX SUTOR: elytris obtusis atris ferrugineo-subnebulosis, scutello luteo, antennis longissimis. *Marsh Ent. Brit. T. I. p. 329.*—*Linn. Syst. Nat. 628. 38.*—*Fn. Suec. 655.*—*Gmel. 1830. 68.*

LAMIA SUTOR. *Fabr. Syst. Ent. 172. 10.*—*Spec. Inf. I. 218. 15.*

CERAMBYX ATOMARIUS. *De Geer. 5. 65. 4.*



Cerambyx Sutor is not a common insect. The male differs from the female in being rather larger and having the antennæ three or four times the length of the body, the antennæ of the latter being much shorter. The species occur in woods.

FIG.

FIG. II.

CERAMBYX MERIDIANUS.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black : wings somewhat fastigate, and with the tip of the abdomen testaceous : breast glossy.

Cerambyx Meridianus. *Linn. Syst. Nat.* 630. 47.—*Faun. Suec.* 648. *Gmel.* 1861. 47.

LEPTURA MERIDIANA: nigra, elytris subfastigiatis abdomineque apice testaceis, pectore nitenti. *Marsh Ent. Brit. T. I.* p. 340. n. 1.

STENOCORUS MERIDIANUS. *Fab. Syst. Ent.* 178. 1.—*Spec. Inf.* I. 225. 1.—*Mant. I.* 143. 1.



The male of this species is black, with the wing-cases rufo-testaceous; the female entirely black with a few yellow downy hairs.

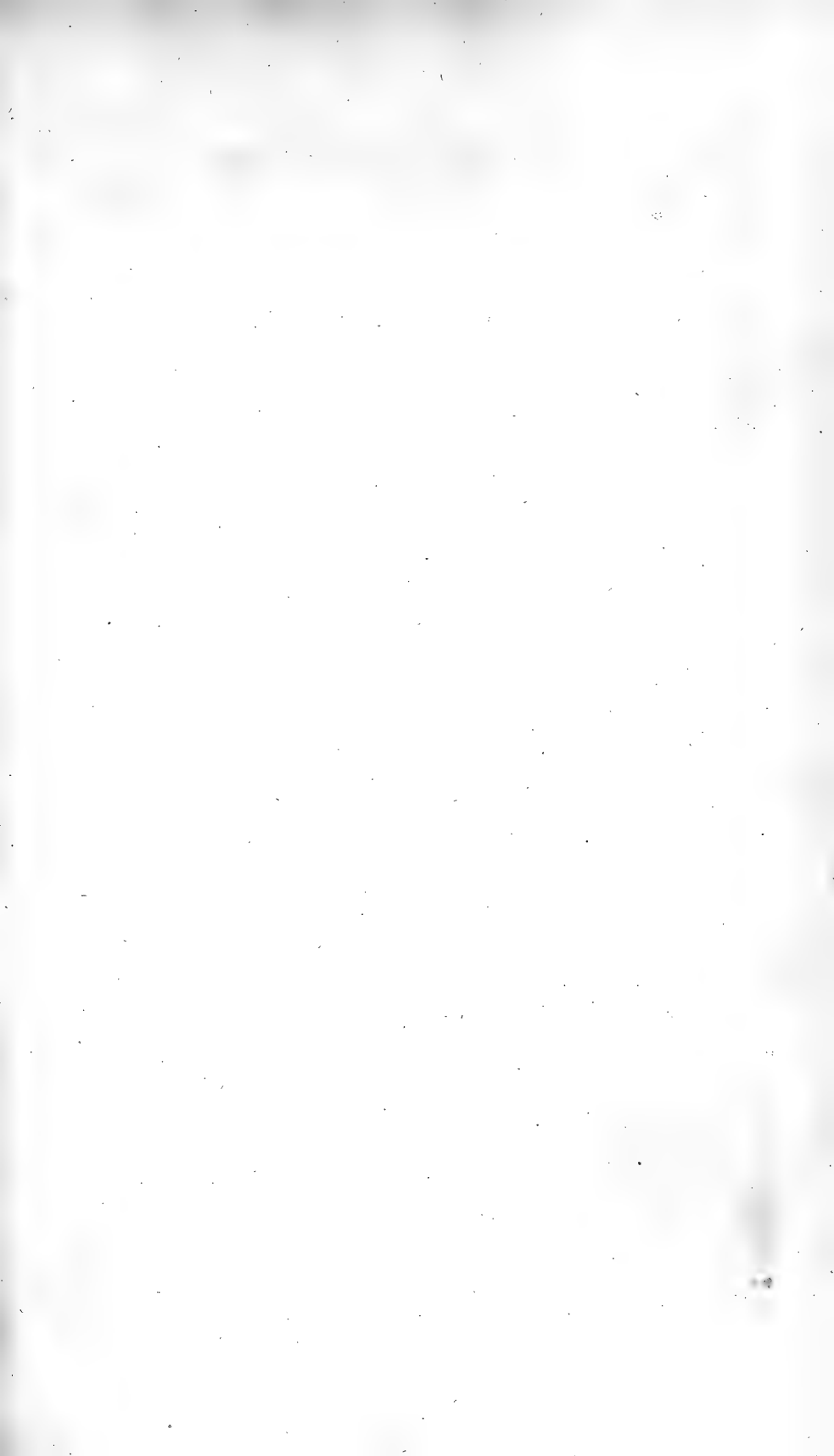




PLATE CCCCXXXVI.

SPHINX CRABRONIFORMIS.

LUNAR HORNET SPHINX,

LEPIDOPTERA,

GENERIC CHARACTER.

Antennæ thickest in the middle: tongue mostly exerted: feelers two, reflected: wings deflexed.

* Section *Sesia*.

SPECIFIC CHARACTER

AND

SYNONYMS.

Head black: anterior margin of the thorax with a femilunar spot: abdomen yellow with two black bands.

SPHINX CRABRONIFORMIS. *Linn. Transf. Soc. v. 3. pl. 3. f. 6—10.*

A species of the *Sesia* family, nearly allied to *Sphinx apiformis*, from which it is principally distinguished by having the whole of the anterior margin of the thorax yellow instead of two spots of that colour; it is also rather smaller, and far more uncommon.

The

The larva is whitish inclining to yellow, with some brown dots; the pupa reddish fuscous. Both sexes have two dark or blackish bands at the base of the abdomen, but in one those bands are entire, in the other marked on each side with a subtriangular spot of yellow. The larva lives in the trunks of willow trees, and appears in the winged state in July.



PLATE CCCCXXXVII.

PAPILIO PRUNI.

BLACK HAIR-STREAK BUTTERFLY.

GENERIC CHARACTER.

Antennæ terminating in a club : wings erect when at rest. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings slightly tailed : above brown with a red spot at the tip of the lower-ones : on the posterior pair beneath a fulvous marginal band dotted with black.

PAPILIO PRUNI : alio subcaudatis supra fuscis : posterioribus subtus fascia marginali fulva nigro punctata. *Linn. Fn. Succ.* 1071.—*Gmel. Linn. Syst. Nat.* 2341.

HESPERIA PRUNI. *Fab. Ent. Syst.* 3. 377. 70.



The larva of this species is of a green colour with a pale lateral line ; the pupa brown with the head white.

This kind is found in the larva state on the cherry, bullace, and other trees of the *Prunus* genus, whence its name. It appears on the wing in July, and is not common.

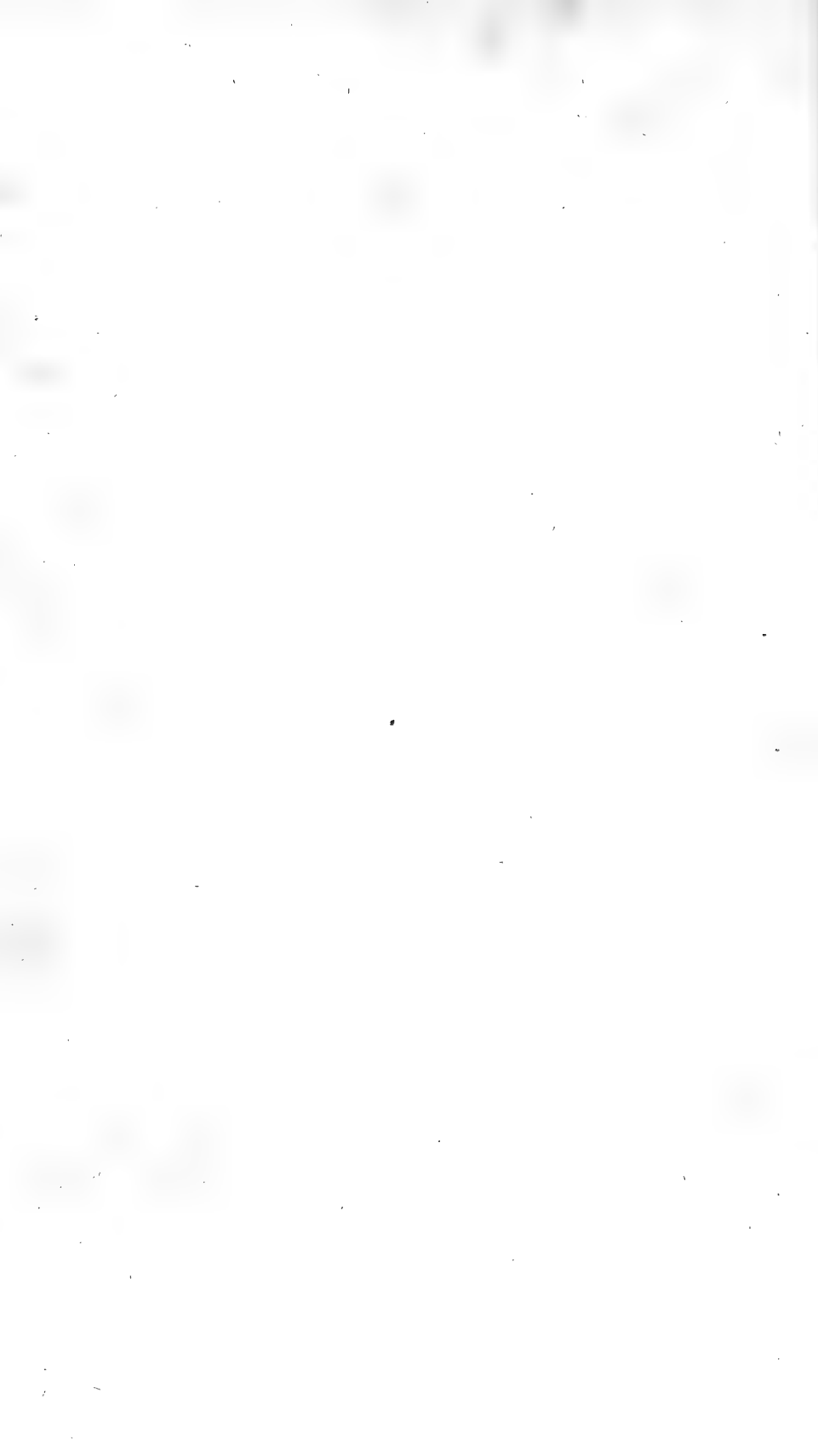




PLATE CCCCXXXVIII.

APIS QUINQUEGUTTATA.

FIVE SPOT BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in female subclavated: wings flat: sting of the females and neuters pungent and concealed in the abdomen.

SPECIFIC CHARACTER.

APIS QUINQUEGUTTATA. Black: second and third joint of the abdomen rufous: posterior ones black with five whitish dots.

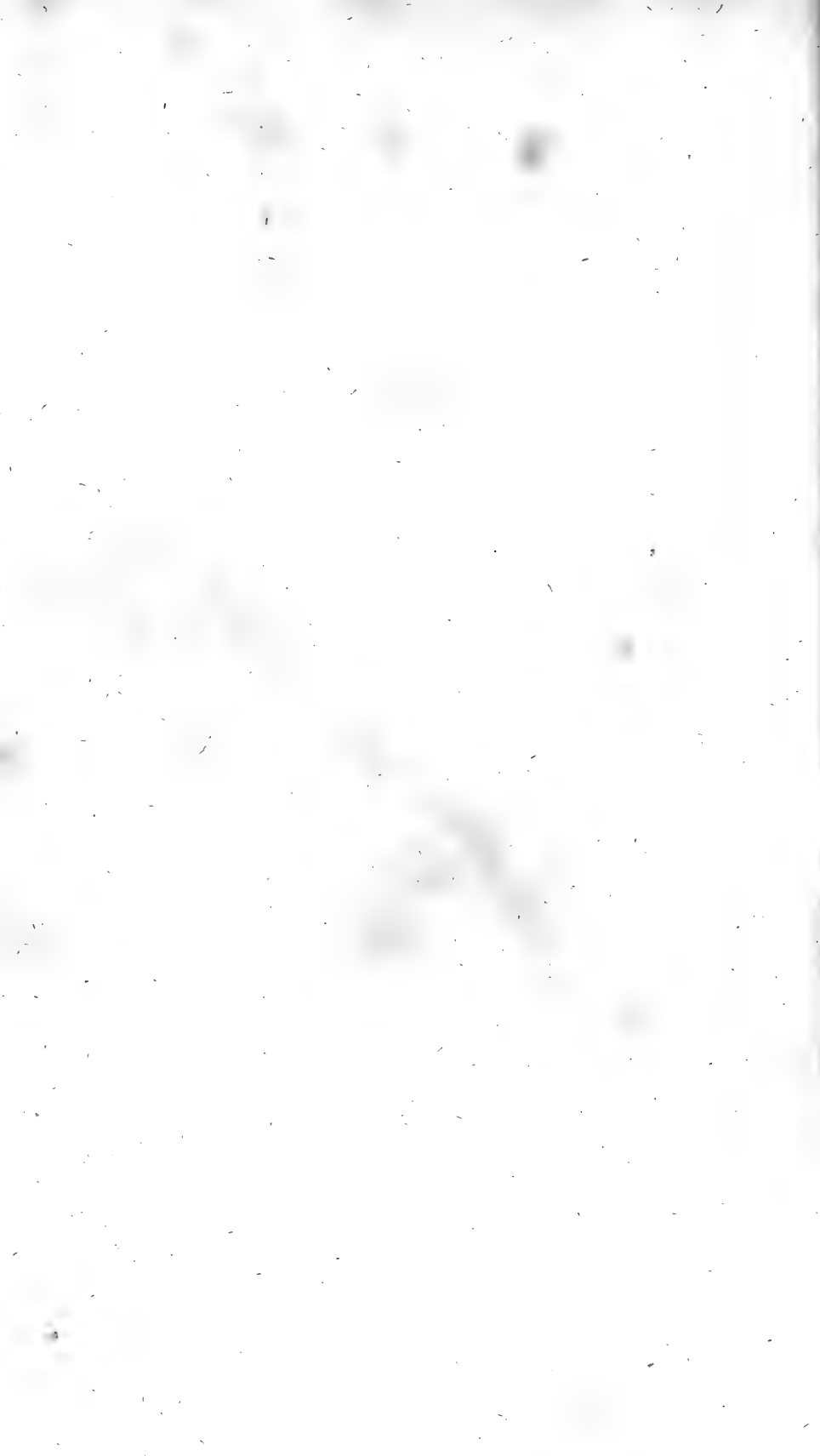
SCOLIA QUINQUE-PUNCTATA. *Fabr. Ent. Syst.*

SAPYGA 5-PUNCTATA. *Latreille Inf.*



A scarce and very elegant species of the Melitta family. Our specimen was taken near Faverham in Kent.

The small figure resting on the leaf No. 1. represents the natural size; the upper figure is magnified.



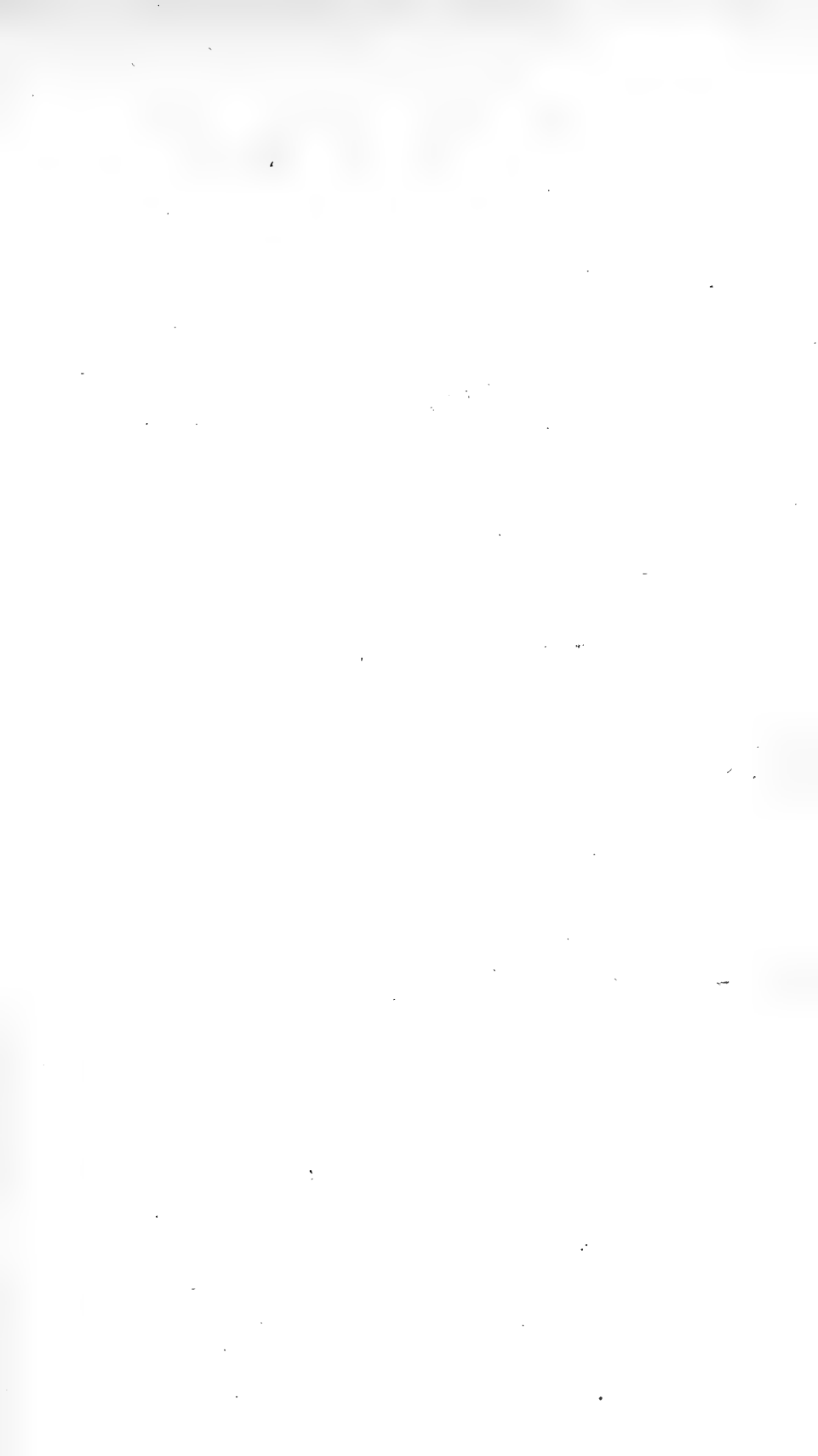




PLATE CCCCXXXIX.

PHALÆNA OLEAGINA.

GREEN BRINDLED DOT MOTH.

GENERIC CHARACTER.

Antennæ tapering from the base : wings in general deflected when at rest. Fly by night.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings green-brown with two white spots, the anterior one pupillated, posterior largest.

PHALÆNA OLEAGINA : alis viridibus fusco subundatis : maculis duabus albis anteriore pupillata ; posteriore majore.

Wien. Schmetterl. p. 59. n. 2.

GREEN BRINDLED DOT. *Haw. Lep. Brit. p. 120. n. 70.*

We accidentally met with an individual of this species on the wing about twilight one summer's evening * near Fishguard in Pembroke-shire, South Wales. It occurred among a number of other insects of the Noctua and Bombyx families by the side of the low hedges which divide the fields and meadows at a short distance from the town. This is the only specimen we have seen British.

* In the month of July 1800.

The larva, as described by Fabricius, is quadridentated: behind cinereous with black and red indentations, and the collar red dotted with black.

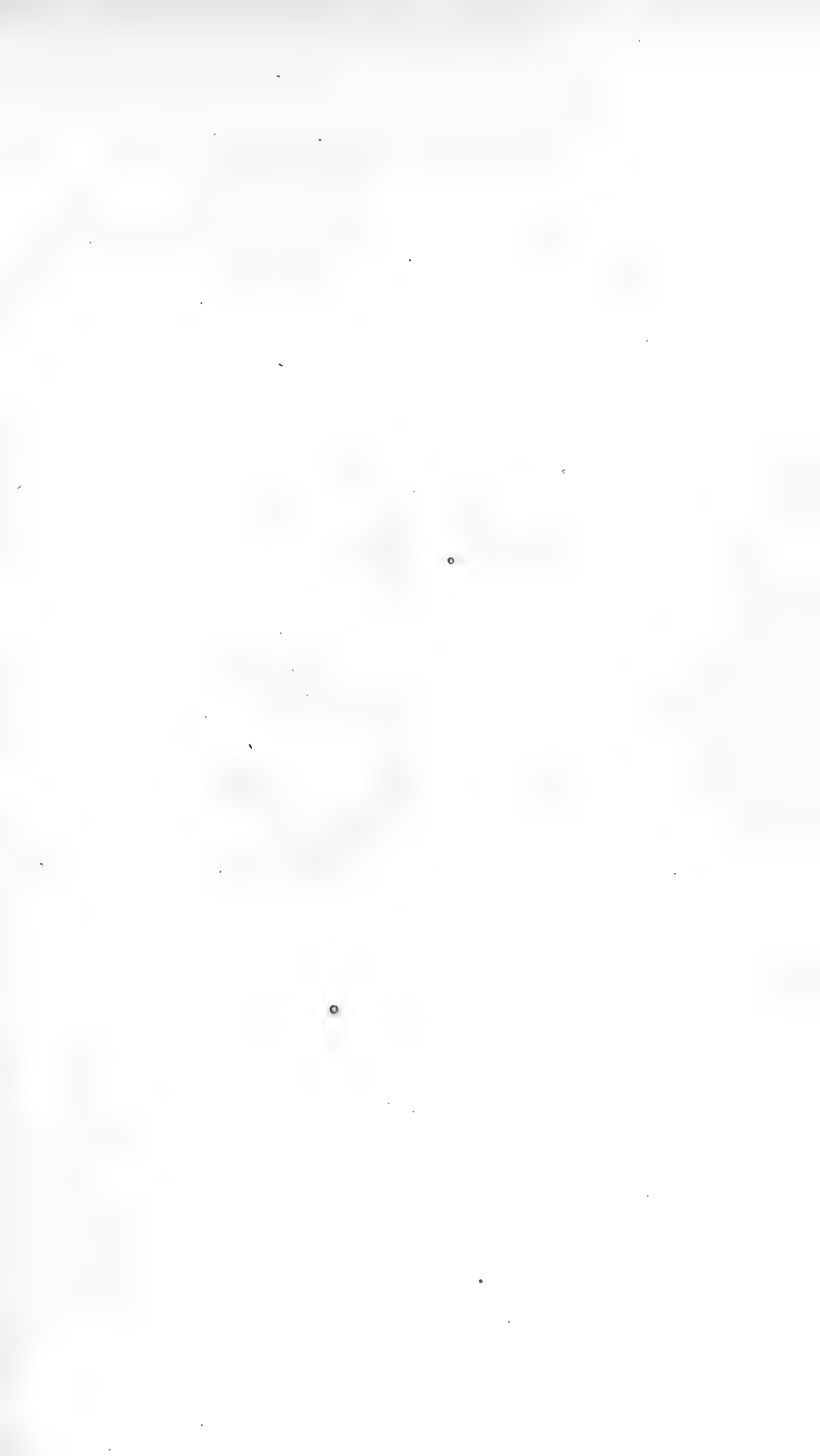




PLATE CCCCXL.

SIREX BIMACULATUS.

BIMACULATED SAW-FLY.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a thick, horny, truncated, short, denticulated mandible: feelers four, the posterior part longer and thicker upwards: antennæ filiform, of more than twenty-four equal articulations: sting exerted, serrated, and stiff: abdomen sessile, terminating in a point: wings lanceolate and incumbent, the lower ones shorter.

SPECIFIC CHARACTER.

SIREX BIMACULATUS. Abdomen yellow: a black spot on the first and three posterior rings: thorax subfuscous, with two black spots.



This is a curious species, and differs apparently from any of the *Sirex* genus at present described. The head and thorax is fuscous, the latter marked in the middle with two blackish oblong spots. The body is orange with black spots, and the legs orange having the posterior pair marked at the lower end of each principal joint with black. The legs are compressed. Wings reddish-brown. The figure in the plate is of the natural size.

PLATE



PLATE CCCCXLI.

FIG. I. I.

TENTHREDO COLLARIS.

COLLARED SAW FLY.

HYMONOPTERA.

GENERIC CHARACTER.

Mouth with a horny curved mandible, toothed within; the jaw straight and obtuse at the tip, the lip cylindrical and trifid: feelers four, unequal and filiform: wings tumid, the lower ones less: sting composed of two ferrated laminæ and almost secreted: stemmata three.

SPECIFIC CHARACTER.

TENTHREDO COLLARIS. Black anterior margin of the thorax rufous.

TENTHREDO OPACA: antennis septemnodis atra thorace utrinque macula apicis rufa. *Fabr. Ent. Syst. T. 2. p. 120?*



A scarce species shewn both in its natural size, and magnified. It is found in gardens.

FIG. II.

TENTHREDO SUCCINCTA.

BROAD YELLOW BANDED TENTHREDO.

SPECIFIC CHARACTER.

Black : margin of the thorax, scutel, and two middle abdominal segments yellow : legs yellow, thighs black.



Found on plants in May and June.



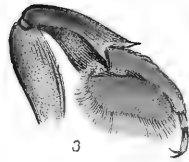


PLATE CCCCXLII.

APIS LAGOPODA, *var.*

THICK LEGGED BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in the females subclavated: wings flat: sting of the females and neuters pungent, and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Grey: anterior legs dilated and ciliated: posterior shanks clavate: vent emarginate.

APIS LAGOPODA: grisea pedibus anticis dilato ciliatis, tibiis posticis clavatis, ano emarginato. *Linn. Syst. Nat.* 2. 927.
27.—*Fn. Suec.* 1702.—*var.*

APIS LAGOPODA. *Panz. Fn. Suec.*



The singular dilation of the shanks of the anterior legs of this insect form a very striking character of the natural family of bees, to which

the species belongs. In the present insect the anterior legs are reddish yellow ; the dilation convex above, beneath convex, and deeply ciliated with hairs of the same colour. It is a scarce species, and like its congenies is supposed to live in the putrescent wood of willow trees.

Fig. I. represents the upper surface of the insect in its natural size ; fig. 2. the underfide a little enlarged. Fig. 3, the under surface of the anterior leg. Fig. 4, the upper surface.





PLATE CCCCXLIII.

PAPILIO RUBI.

GREEN HAIR-STREAK.

GENERIC CHARACTER.

Antennæ terminating in a club: wings erect when at rest. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings flightly tailed, above brown, beneath green.

PAPILIO RUBI: alis subcaudatis supra fuscis subtus viridibus. *Linn.*

Fn. Suec. 1077. *Gmel. Linn. Syst.* p. 2352. 237.

HESPERIA RUBI. *Fabr. Ent. Syst.* 523, 339.—*Spec. Inf.* 121.
539.

Esper Schmet. t. 21. *f.* 2.

Ræm. Gen. t. 18. *f.* 11. 12.

Schæff. Icon. t. 29. *f.* 5. 6.

Geoffr. Inf. p. 2. *p.* 64.

The green hair streak butterfly occurs in the larva state on the bramble in the month of July, and the perfect or winged insect appears in May.

The

The larva of this species is of a green colour varied with yellow, and has the head black: the pupa is pale brown. The upper surface of the fly in both sexes is brown, and the lower a rich and elegant filky green. Near the centre of the anterior wings on the upper surface is an obscure paler spot of an oblong form, and which is commonly most conspicuous in the male. The two sexes may be in a great measure distinguished likewise by the number and situation of the white dots on the lower surface of the posterior wings, these in the female constituting an uniform series or line extending entirely across, while in the male they are interrupted, and though distinct on the edges of the wing, are scarcely perceptible towards the disk. The female is also larger than the male; a circumstance not peculiar to this species, but common to most others of the insect tribe.



PLATE CCCCXLIV.

TENTHREDO VIRIDIS.

GREEN SAW-FLY.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a horny curved mandible, toothed within; the jaw straight and obtuse at the tip: lip cylindrical and trifid: feelers four, unequal, and filiform: wings tumid, the lower ones smaller: sting composed of two serrated laminæ and almost secreted: stigmata three.

SPECIFIC CHARACTER

AND

SYNONYMS.

Green: head and thorax, charactered with black: abdomen with black spots.

TENTHREDO VIRIDIS: capite thoraceque supra caracteribus nigris. *Geoff. Inf.* 2. 271. n. 1.

Tenthredo viridis: antennis septemnodis, corpore viridi, abdomine supra fusco. *Linn. Syst. Nat.* 2. 994. 27.—*Fn. Suec.* 1554.—*Fabr. Ent. Syst. T.* 2. p. 113. n. 33. *Sulz. Inf. tab.* 18. fig. 112.

The ground colour of this elegant insect varies from a pale yellow to bright green, and sometimes to brown, the markings of black lines appear

appear to be pretty nearly the same in all the varieties. This insect is common in the summer season, and is chiefly found on the Alder, on which it is supposed to feed.

The smallest figure in our plate denotes the natural size.

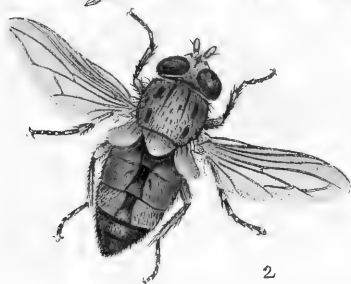


PLATE CCCCXLV.

FIG. I. I.

MUSCA MACULATA.

SPOTTED FLY.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis and two equal lips : sucker furnished with bristles : feelers two, very short or sometimes none : antennæ generally short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Cinereous: thorax lineated with black: abdomen spotted with black, and marked at the tip with two black dots.

MUSCA MACULATA: *antennis plumatis pilosa nigra, thorax nigro-lineato, abdomine atro-maculato, ano bipunctato.*
Linn. Syst. Nat. 12. 2. p. 990. n. 70.
Scop. ent. carn. 870.

MUSCA MACULATA: cinerea, thorace abdomineque maculis numerosis atris. *Fabr. mant. Inf. 2. p. 342. n. 8.*

This is a remarkably pretty species, and appears to considerable advantage before the lens of an opaque microscope. The two small distinct black dots on the extreme joint of the abdomen is a striking character of this interesting insect.

The smallest figure represents the natural size; this species is found on plants in Europe, and is rare.

FIG. II. II.

MUSCA SERICEA.

SILKY MUSCA.

SPECIFIC CHARACTER.

MUSCA SERICEA. Silky: head, thorax and scutellum subtestaceous: first three joints of the abdomen reddish-orange with a dorsal black stripe; tip greyish black.

A curious species and of the size denoted by the smallest figure (No. 2.) in the annexed plate. The whole surface of this insect except the wings has a delicate silky appearance: the thorax is marked in the middle with two distant black lines, and each side with two shorter lines

lines of the same colour, forming altogether a remarkable character of this particular species.

This kind appears to be rare, our specimen was taken in Kent in the neighbourhood of Faversham.





PLATE CCCCXLVI.

PAPILIO BRASSICÆ.

LARGE GARDEN WHITE BUTTERFLY.

GENERIC CHARACTER.

Antennæ terminating in a club : wings erect when at rest. Fly by day

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings rounded, entire, white : tip of the upper pair in the male black, and in the female marked with two black spots.

PAPILIO BRASSICÆ : alis anterioribus maculis duabus apicibusque nigris, major. *Linn. Fn. Succ.* 1035.—*Gmel. Linn. Syst. Nat.* 2259. n. 75.
Fabr. Ent. Syst. 463. 110.—*Fab. Syst. Ent.* 3. 186. 574.—*Spec. Inf.* 2. 38. 161.
Roef. Inf. 2. t. 4.
Esper Schmet. t. 3. f. I.
Schaff. Icon. 40. f. 3. 4. and 140. f. 4. 5.
Geoffr. inf. p. 2. p. 68. n. 40.
Wien. Schmetterl. p. 163. D. 2.

In dry seasons favourable to the growth and increase of these pernicious insects, the larvæ become very injurious to our gardens, and
would

would be infinitely more so were it not for the number of small birds which prey upon them, and thus lend their friendly aid to destroy those unwelcome intruders. They feed for the most part on cabbages, and some other horticultural plants, which renders them more injurious to the kitchen garden than any other. The larva is of the number of those known in England by the trivial title of the grub, and in the perfect or winged state it is distinguished by the less ambiguous epithet of Large Cabbage Butterfly.

The larva of this species appears in spring, and indeed throughout great part of the summer, as there are two or more broods of them every year. The appearance of these Butterflies on the wing in a morning is considered generally as an unerring indication that the weather will clear up, and the day eventually prove fine. This insect though common is certainly not uninteresting.



PLATE CCCCXLVII.

PHALÆNA URSULARIA.

THICK-HAIRED MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ tapering from the base : wings in general deflected when at rest. Fly by night.

GEOMETRA.

SPECIFIC CHARACTER.

PHALÆNA URSULARIA. Thorax thickly clothed with hair : anterior wings pale brown, with undulated fuscous waves and dots : posterior pair whitish.

This moth possesses every character of a genuine *Bombyx*, and might be without scruple referred to that section, but for the authority of Mr. Drury who was so fortunate as to rear it from the caterpillar ; and which being of the looper kind decidedly proves it to be of the *Geometra* instead of *Bombyx* family.

The antennæ in this insect as in the *Bombyces* is much pectinated, the thorax thick, and the body large and bulky. From its general habit it appertains therefore to the full bodied tribe of *Geometræ*, at the head of which we may rank the species *Hirtaria*. This last mentioned insect is so clearly of the *Bombyx* family from its general appearance,

ance, that if its larva had not been distinctly ascertained to be one of the loopers, we should have still considered it of the Bombyx kind. Our present insect bears some resemblance also to the species *Hirtaria* but is smaller.

Mr. Drury bred the two sexes of this extremely rare insect many years ago. These specimens are still preserved in the cabinet formed by that eminent collector, and are the only examples of the kind we have ever seen; neither is the species, which we believe to be perfectly new, in the possession of any other collector within our knowledge.

Both sexes are represented in the annexed plate.



PLATE CCCCXLVIII.

PAPILIO ADIPPE.

HIGH BROWN FRITILLARY.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ clubbed at the end; wings erect when at rest: fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings indented, fulvous with black spots; twenty three silver spots on the posterior pair beneath.

PAPILIO ADIPPE: alis dentatis fulvis nigro maculatis: subtus maculis 23 argenteis. *Linn. Fn. Suec.* 1066.—*Gmel. Linn. Syst. Nat.* p. 2334. n. 212.—*Fabr. Ent. Syst.* 3. 146, 448.—*Syst. Ent.* 517. 213.



The larva of this beautiful Butterfly is found on plants in May, and appears in the winged state in July. The larva is cinereous brown, with numerous rufous hairs and spines, and a dorsal white stripe, with a dark line along the middle, and the sides marked with a series of white spots. The pupa is fuscous with silvery dots.

This species is scarce, and occurs chiefly near the skirts of woods, The larva is said to feed on the two species of violet, *viola odorata*, and *tricolor*.

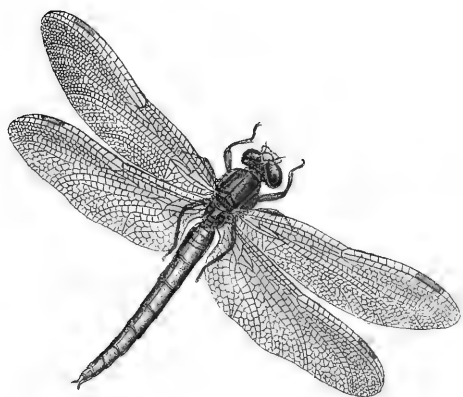


PLATE CCCCXLIX.

LIBELLULA BIGUTTATA.

BIMACULATED DRAGON-FLY.

NEUROPTERA.

Mouth armed with jaws, more than two in number; lip trifid: antennæ very thin, filiform, and shorter than the thorax: wings expanded: tail of the male furnished with a furcated process.

SPECIFIC CHARACTER.

LIBELLULA BIGUTTATA. Abdomen depressed and narrow; the first joint marked in the middle with two small yellowish spots.

A small brood of this curious species of Dragon fly was discovered about eight years ago in a marshy ground at Hampstead, since which time they have entirely disappeared. It is neither described by Linnaeus or Fabricius, nor by any other writer we are acquainted with.

This new species is allied in its general aspect to the *Libellula depressa*: the abdomen as in that insect is flat, and rising into a longitudinal ridge along the middle, but is considerably narrower in proportion, and this circumstance is alone sufficient to prove that it is of a different species. The pale yellowish spots on the first joint of the abdomen at the base is also a striking character: two of these spots are placed contiguous to each other on the back, and two others appear one on each

side, but so close to the lateral edge as to escape attention unless inspected closely. A similar lateral spot is perceptible likewise a little below these, neither of which are however so conspicuous as the two dorsal spots first mentioned. The wings are transparent with a common oblong testaceous stigma at the costal margin near the tip.

Libellula biguttata is represented in its natural size in the annexed plate.



PLATE CCCCL.

PHALÆNA GRAMMICA.

FEATHERED FOOTMAN MOTH.

GENERIC CHARACTER.

Antennæ tapering from the base: wings in general deflected when at rest. Fly by night.

Bombyx.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings pale yellow: anterior pair yellow striated with black; lower ones with a black terminal band.

PHALÆNA GRAMMICA: alis luteis: primoribus flavis nigro striatis, posterioribus fascia terminali nigra. *Linn. Fn. Suec.* 1134.—*Amoen. acad.* 5. t. 3. f. 31.
Fabr. sp. inf. 2. p. 196. n. 113. *Roef.* 4. t. 21.
f. A. D. Geoffr. inf. p. 2. p. 115. n. 17. *Schæff. icon.* t. 92. f. 2. *Ray Inf.* p. 169. n. 28. and p. 280. n. 13.

We introduce this elegant species of the Moth tribe among the insects of Great Britain upon the most satisfactory authority, having
our-

ourselves met with a living specimen of it in the Island of Anglesea some few years ago. This occurred in the day time, in the month of September, under the shade of a little cluster of stones and bushes near Manachty, the northern extremity of the island, and at no great distance from the road to Gwyndy.

It is not entirely new as an English insect, having been described by Ray, but this is the only instance within our recollection, since the time of that writer, in which any naturalist is said to have met with it in our country. In Germany, and several others parts of Europe it is not very unfrequent.

The specimen discovered by us is of the male sex, and is that represented in the upper part of the annexed plate. The lower figure is of the female-kind, which we have ventured to add, though taken from an exotic specimen in order to illustrate the history of this curious insect, the two sexes of which differ so materially that they might readily be mistaken for distinct species.

It rarely occurs to observation in the larva state: by some it is supposed to feed on the ash, while others affirm that its natural-food is the plaintain. The larva is brown with a white dorsal line, and rufous legs. The pupa ferruginous.

1



PLATE CCCCLI.

CONOPS PETIOLATA.

PETIOLATED CONOPS.

DIPTERA.

GENERIC CHARACTER.

Mouth with a projecting geniculated proboscis: antennæ clubbed and pointed at the end,

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ black, with the club reddish: head yellow: abdomen petiolate.

CONOPS PETIOLATA: antennis nigris: clava rubra, capite flavo, abdomine petiolato. *Gmel. Linn. Syst. Nat. p. 2894.*



An example of this very rare, and elegant insect occurs in Mr. Drury's cabinet of British insects now in our possession: the particulars relative to its capture are however unknown to us. The species is evidently the *petiolata* of Gmelin, described by that writer, as it appears on the authority of Laxman as a native of Siberia. We have reason to apprehend that it is not figured in any work, and is only noticed as a species on the authority above mentioned.

The smallest figure denotes the natural size. The general colour of this insect is black with a hoary cast, the petiole of the abdomen brownish

brownish red, and the club of the palpi yellow. Its wings are brown midway down from the costal rib, and becomes hyaline towards the thinner margin. The legs are reddish.



PLATE CCCCLII.

PHALÆNA FASCIELLA.

BANDED TINEA MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ tapering from the base : wings in general deflected when at rest. Fly by night.

Tinea.

SPECIFIC CHARACTER.

PHALÆNA FASCIELLA. Buff, with a broad greyish figured band across the middle : tip greyish.



An insect of small size, but extremely elegant, and singular in its appearance. We met with the specimen on the side of Dinas Brân Hill, in the Vale of Llangollen, North Wales, in the month of August, 1802.

This pretty acquisition is represented both in its natural size and magnified.

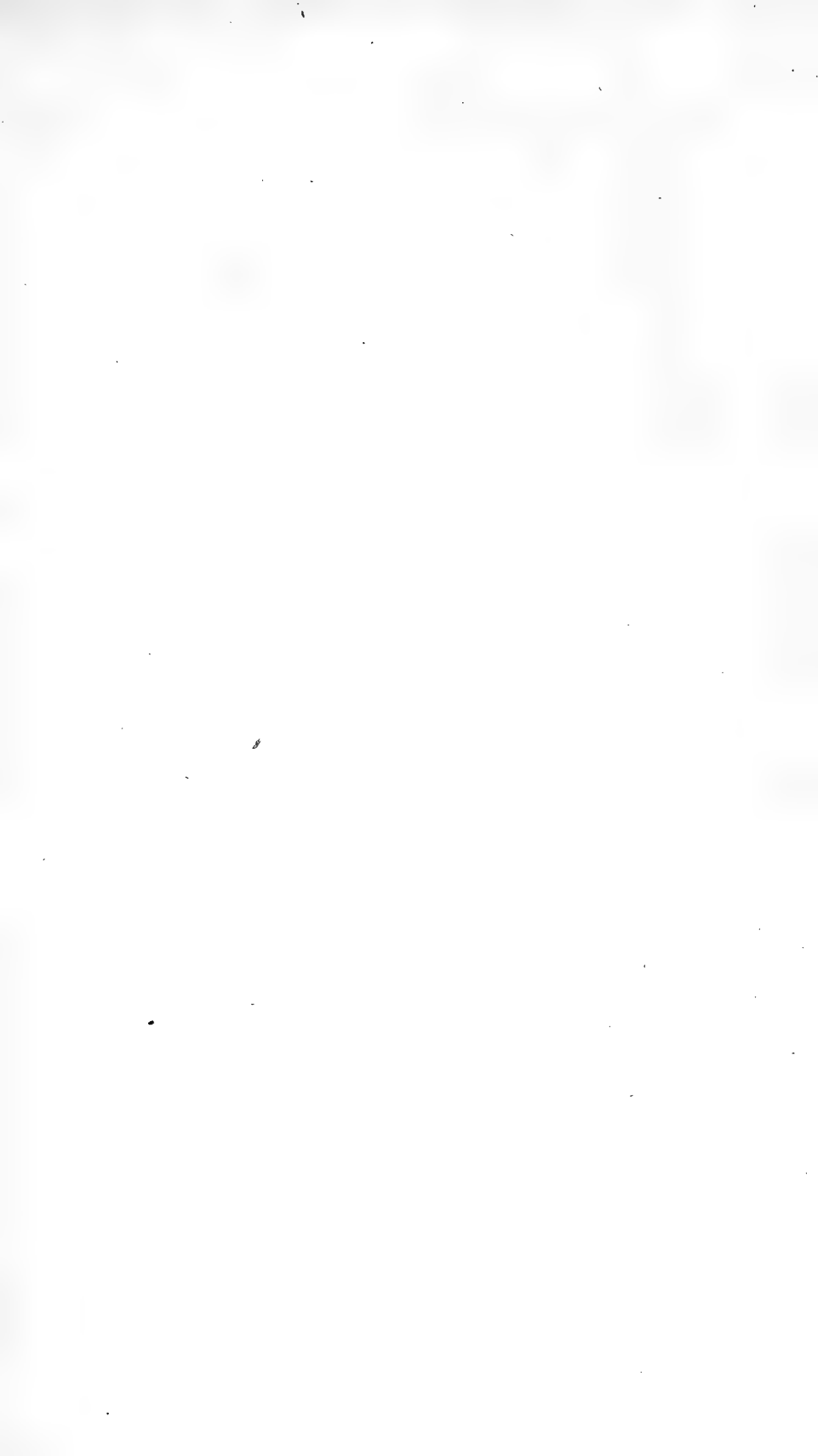




PLATE CCCCLIII.

FIG. I.

PHALÆNA AUROSIGNATA.

SCARCE PURPLE GOLDEN Y MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the base ; wings in general deflected when at rest : fly by night.

Noctua.

SPECIFIC CHARACTER.

PHALÆNA AUROSIGNATA. Anterior wings purplish varied with fuscous : in the middle a vermicular golden character irregularly lobate at one extremity.

This is an extremely scarce, and we believe, undescribed species. In its general appearance this curious insect is nearly allied to the *Noctua interrogationis* of Fabricius ; it is as large as the Common Y Moth (*Noctua gamma*) : the anterior wings are tinged with purple, and the flexuous mark in the middle of each golden. The habits of this species are unknown.

FIG. II.

PHALÆNA LEUCONOTA.

WHITE-BACKED MOTH.

SPECIFIC CHARACTER.

PHALÆNA LEUCONOTA. Fuscous : thorax, back part of the anterior wings, and transverse band white : abdomen and posterior wings whitish.



A single specimen of this elegant and strikingly singular *Phalæna*, occurs in the cabinet of the late Mr. Drury ; the figure in the annexed plate represents it in its natural size, and it is the only example of the species we have seen.



PLATE CCCCLIV.

PAPILIO CRATÆGI.

BLACK VEINED WHITE BUTTERFLY.

GENERIC CHARACTER.

Antennæ terminating in a club; wings erect when at rest. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings white, entire; and veined with white.

PAPILIO CRATÆGI: alis albis: venis nigris. *Linn. Fn. Suec.*
 1034.—*G l Li . yst. nat. p. 2257. n. 72.—*
Fabr. Ent. Syst. T. 3. . 82. 563.
Aldrov. inf. 246. f. 9.
Reaum. Inf. 2. t. 2. f. 9. 10.
Roef . f. I. p. 2. t. 3.
Frisch inf. 5. p. 16. t. 5.
Degeer inf. I. t. 14. fig. 19, 20.
Wien. Schmetterl. d. 163. D.
Schæff. ic. t. 140. f. 9. 3.
Esper. pap. I. t. 2. f. 3.

Papilio Cratægi is one of the rarest species of the *Danai candidi*, or white tribe of butterflies found in Britain. It is a delicate, and by

no means inelegant insect, though altogether plain in its appearance; and may be readily distinguished from the other analogous species, by the nerves both of the upper and lower wings being black, while the ground colour is white.

The larva feeds chiefly on the pear tree, or gooseberry, and is found in spring. The perfect insect occurs in summer, and is sometimes observed in gardens hovering about fruit trees, the nectareous juices of which afford it sustenance.



PLATE CCCCLV.

VESPA SEXCINCTA.

SIX BELLED WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw : feelers four, unequal and filiform : antennæ filiform, the first joint longest and cylindrical : eyes lunar : body glabrous : sting pungent, and concealed within the abdomen : upper wings folded in both sexes.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax spotted : abdomen with six yellow bands, the first interrupted.

VESPA SEXCINCTA: thorace maculato: abdomine fasciis sex flavis primo interruptis. *Fabr. sp. inf. I. p. 470. n. 7.*
Mant. Inf. I. p. 295. n. 9.

Described by Fabricius as a native of Germany: it is a very rare British species, and has not been figured by any author.

PLATE





PLATE CCCCLVI.

PHALÆNA COMMUNIFASCIATA.

SINGLE STREAK MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the base : wings in general deflected when at rest. Fly by night.

GEOMETRA.

SPECIFIC CHARACTER.

PHALÆNA UNIFASCIATA. . Cinereous-buff with a single common fuscous streak in the middle.



An insect met with many years ago by Mr. Drury. The upper wings are pale cinereous buff colour, the lower ones of the same tint but rather paler, and both are marked with a common fuscous streak extending entirely across the middle. A single row of dots form a line along the outer margin of all the wings, and another series though much fainter traverse the upper wings midway between the common band, and the outer margin. It is extremely rare, if not unique.

The figure represents this curious insect in its natural size.

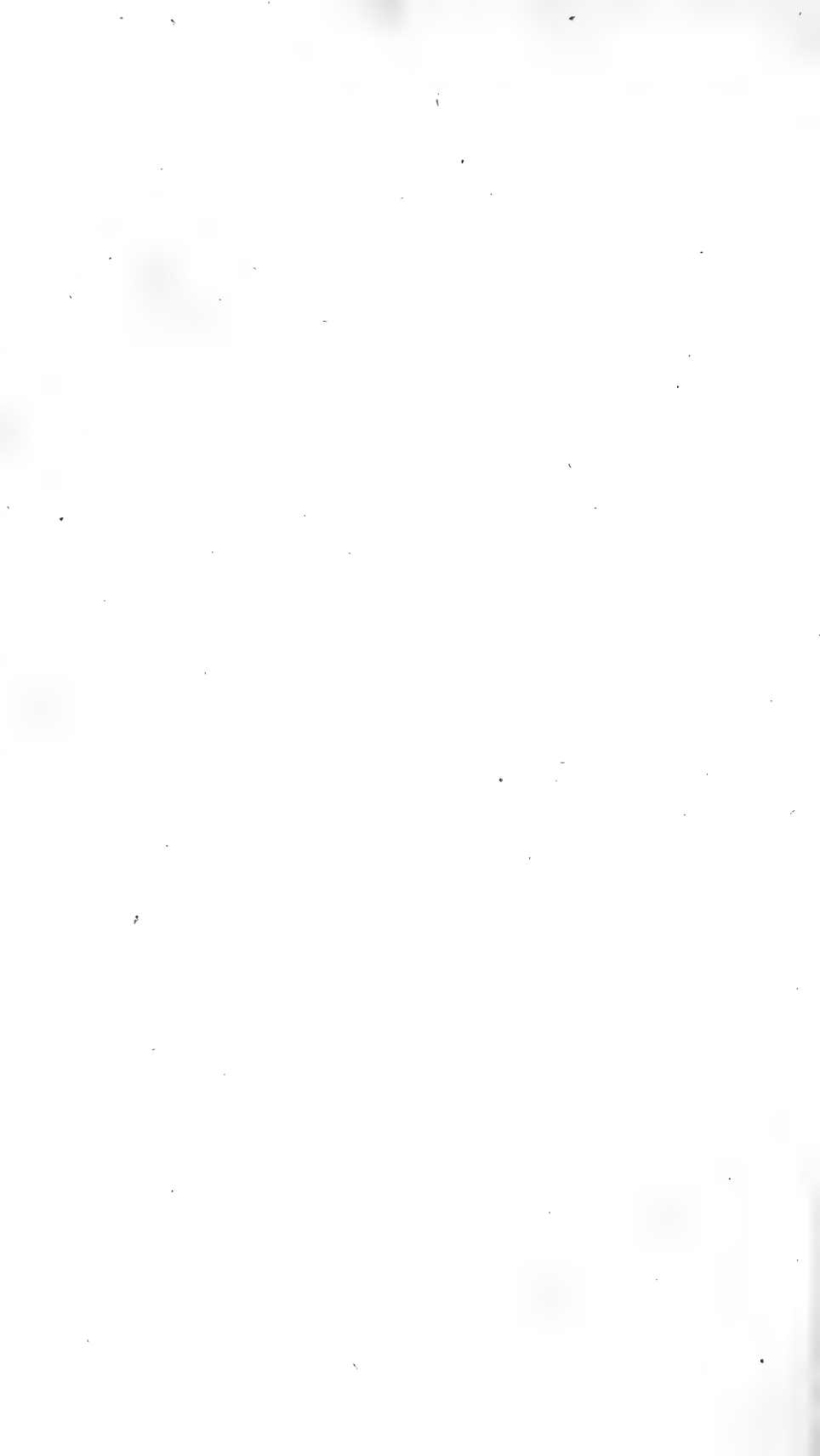






PLATE CCCCLVII.

BLATTA MADERÆ.

MADEIRA COCK ROACH.

HEMIPTERA.

GENERIC CHARACTER.

Head inflected: antennæ fetaceous: feelers unequal, and filiform: wing-cafes and wings smooth, and somewhat coriaceous: thorax rather flat, orbicular, and margined: legs formed for running: abdomen terminated in four spines or bristles.

SPECIFIC CHARACTER

AND

SYNONYMS.

Brown: thorax livid variegated with brown: wing-cafes pale livid, the extreme half marked with numerous tranfverfe brown lines.

BLATTA MADERÆ: fusca thorace elytrisq̃ue lividis fusco variegatis.

Fabr. Ent Syst. T. 2. p. 6. 119. 2.

A large species of the cock roach tribe which inhabits the island of Madeira, and from whence it has been lately introduced into this country with goods and merchandize as the common cock roach (*Blatta orientalis*) was originally from the eastern parts of the world. The species has not yet become common in England. Our specimen was taken by Mr. Stachbury.

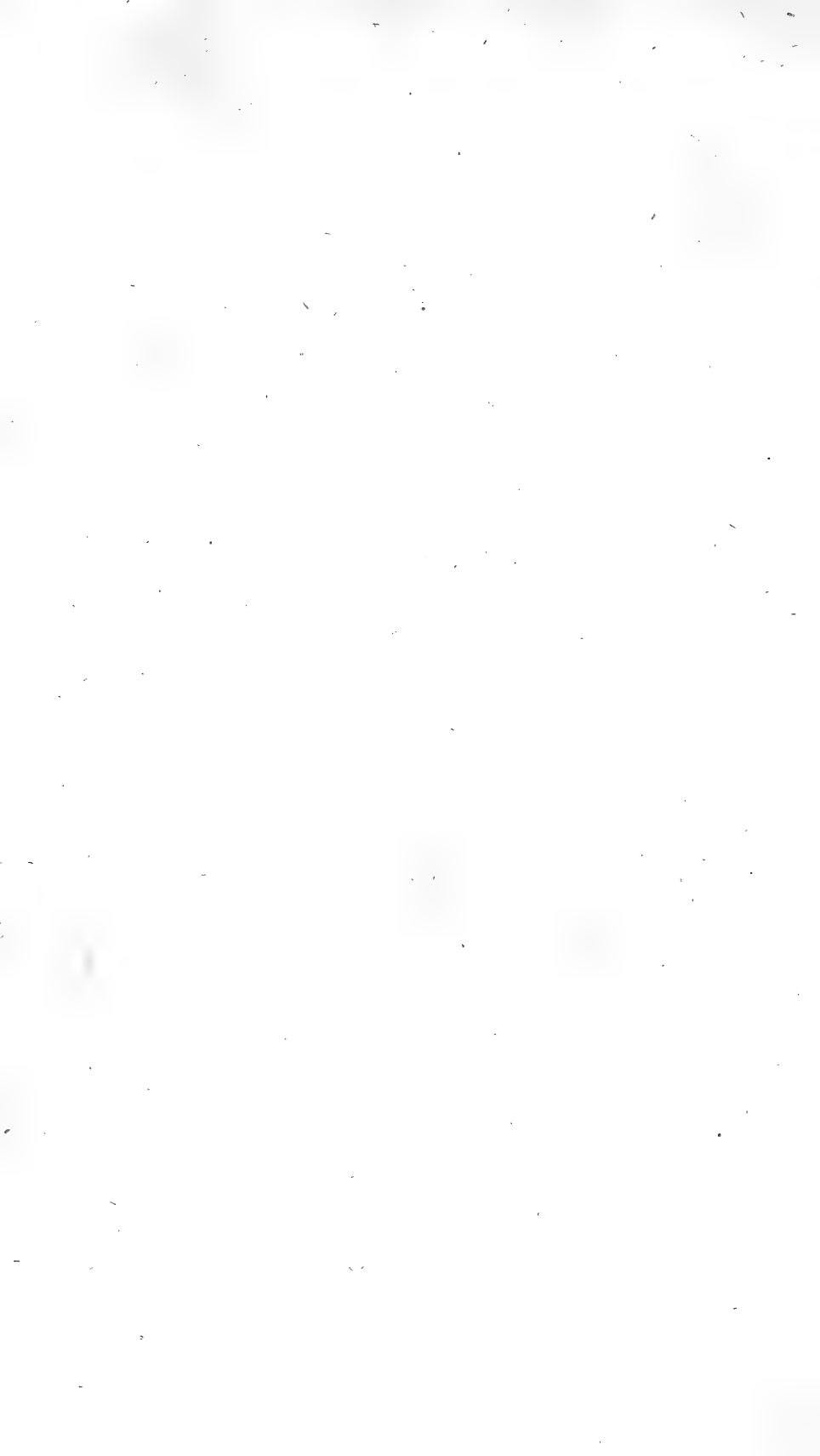




PLATE CCCCLVIII.

PHALÆNA GRAMINIS.

ANTLER MOTH.

GENERIC CHARACTER.

Antennæ tapering from the base : wings in general deflected when at rest. Fly by night.

Bombyx.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings brown, with a trifurcated whitish line, and dot.

PHALÆNA GRAMINIS : alis griseis : linea trifurca punctoque albidis.

Linn. Fn. Succ. 1140.—*Act. Stockh.* 1742. p. 40.
t. 2.

Fab. Spec. Inf. 2. p. 204. n. 148.

— *Syst. Ent.* 2. 586. 106.

Frisch inf. 10. t. 21.

Noctua tricuspis *Hüb. Schmet.* 3. t. 60. fig. I.

This insect obtained the name of “*Antler Moth*” among the old collectors, in allusion to the trifurcated whitish mark on the anterior wings, which bears some resemblance to the antler of a stag. In this country the species is very uncommon; in some other parts of Europe on the contrary it is exceedingly abundant, and as it feeds on
grafs

grafs is excessively destructive. The ravages committed in the space of a single year by this Insect in the Swedish pastures has been estimated at a clear loss of a hundred thousand ducats.

The larva is smooth, and dusky, with a dorsal yellow stripe, and another of the same colour on the sides. It is found at the roots of grafs; the winged insect in woods.

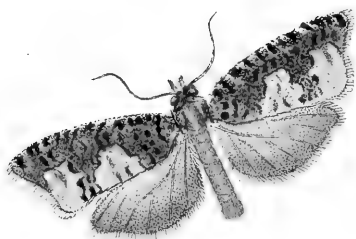


PLATE CCCCLIX.

PHALÆNA BIMACULANA.

BIMACULATED TORTRIX MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ tapering from the base: wings in general deflected when at rest. Fly by night.

Tortrix

SPECIFIC CHARACTER.

PHALÆNA BIMACULANA. Wings deep grey varied with transverse fuscous and testaceous bands: two large sub-triangular whitish spots on the interior margin.

An elegant and curious moth of the Tortrix family found near Faversham in Kent. The species is not apparently described by any author, and the present is the only specimen of its kind we recollect to have seen.

The smallest figure represents the natural size.

PLATE

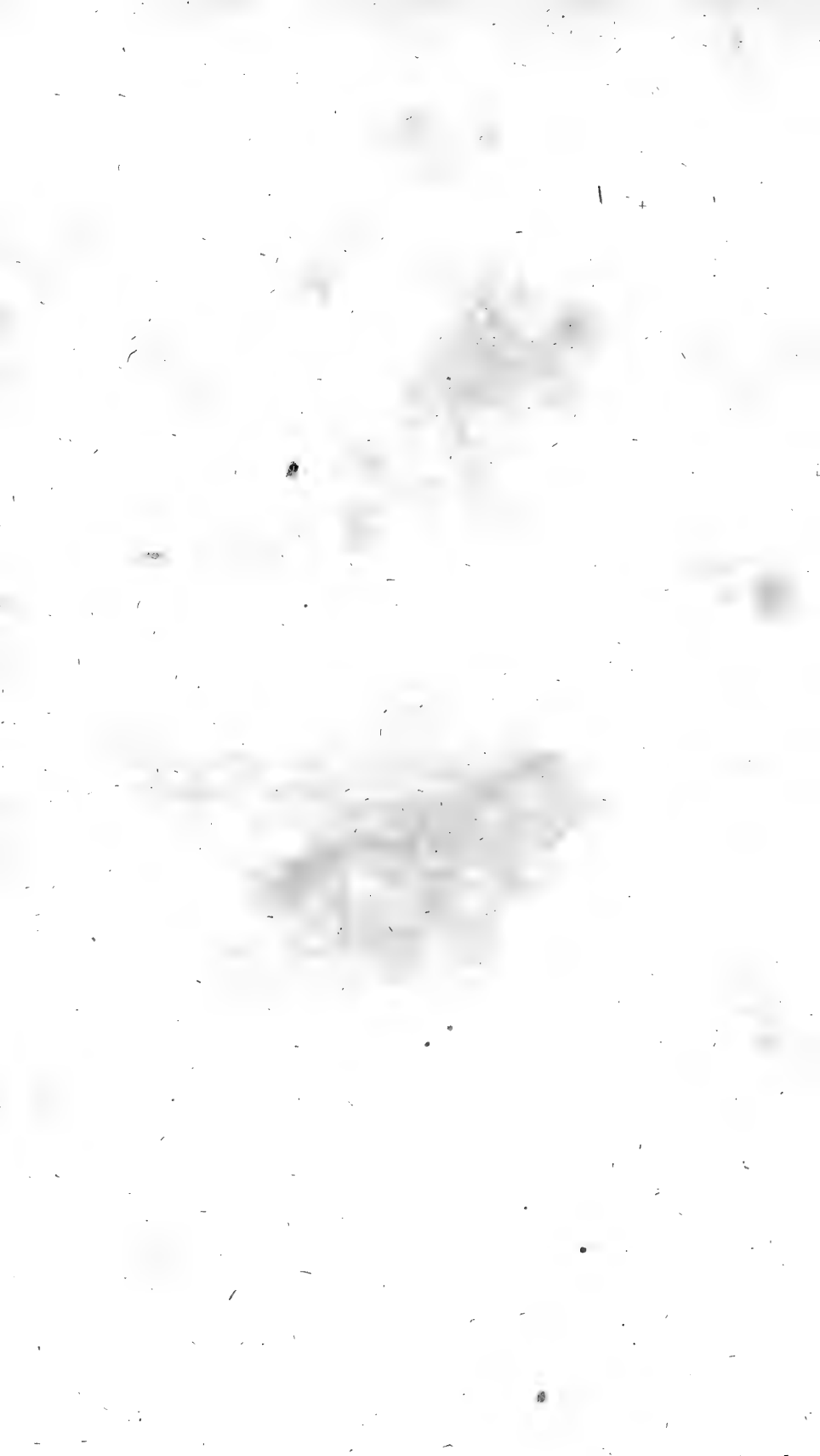




PLATE CCCCLX.

PAPILIO QUERCUS.

PURPLE HAIR-STREAK BUTTERFLY.

GENERIC CHARACTER.

Antennæ terminating in a club : wings erect when at rest : fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings flightly tailed ; blue above, beneath cinereous with a white streak, and double fulvous dot in the anal angle.

PAPILIO QUERCUS : alis subcaudatis cærulescentibus, subtus cinereis : striga alba punctoque ani gemino fulvo. *Linn. Fn. Suec.* 1072.—*Mus. Lud. Utr.* 314.—*Gmel. Linn. Syst. Nat.* I p. 2341.

HESPERIA QUERCUS. *Fabr. sp. inf.* 2. p. 118. n. 527.—*Mant. inf.* 2. p. 69. n. 652.—*Ent. Syst.* 3. 278. 72.
Esper Schmet. t. 19. f. 2. c, a.
Albin Inf. t. 52. b. c.
Admiral Inf. t. 17.
Roem. Gen. t. 18. f. 10.

The Purple Hair Streak feeds on the Oak. The larva is fat, of a pale or rosy red colour, and marked with lines of green dots ; the pupa glossy, and ferruginous, with three dorsal lines of brown

dots. This species is found in the larva state in June, the fly appears in July.

Both sexes of this Butterfly are of a blackish brown colour, but the male is distinguished by having a large cordated space of a rich blue colour in the disk of the anterior pair. This is an interesting species, and not by any means common.



PLATE CCCCLXI.

FIG. I.

PHALÆNA MEDIOPUNCTARIA.

MIDDLE-DOT MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the base : wings deflected when at rest. Fly by night.

Geometra.

SPECIFIC CHARACTER.

PHALÆNA MEDIOPUNCTARIA. Wings pale ; anterior pair with two transverse waved lines and central dot of fuscous : posterior pair with a single waved fuscous line.



A pair of this singular and decidedly marked *Phalæna* occurs in the collection of Mr. Drury, and these are the only examples of the species we have seen in any cabinet. It appears to be entirely of a new kind.

FIG. II.

PHALÆNA TRISTRIGARIA.

THREE-STREAK MOTH.

SPECIFIC CHARACTER.

PHALÆNA TRISTRIGARIA. Anterior wings greyish, with three small black streaks at the tip, and a subtestaceous band across the middle: posterior wings immaculate.

This is an interesting species of that particular kind of moths called the Carpets. The general colour is faint reddish grey with a single irregular broad band of a somewhat testaceous hue across the middle of the anterior wings, and the space at the base of the wing is of the same colour rather paler. Towards the apex are three short black streaks, and a small triangular spot which seems to constitute one of the most essential characteristics of this species. The lower wings are pale brown, and immaculate.

We believe this *Phalæna* is not described by any author.

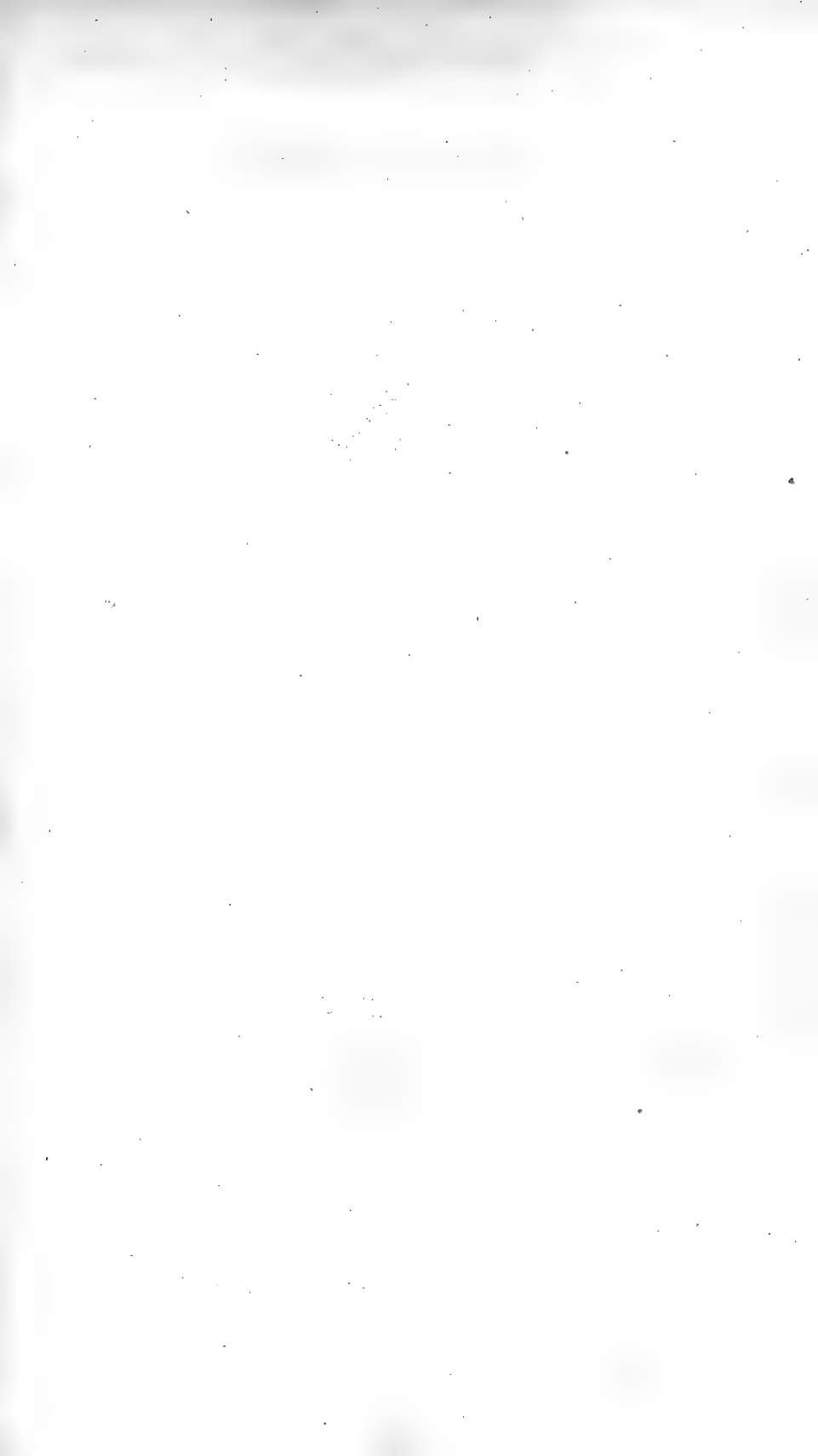




PLATE CCCCLXII.

PHILANTHUS FLAVIPES.

YELLOW LEGGED PHILANTHUS.

Vespa Linn.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw : feelers four, unequal and filiform : antennæ filiform, the first joint longer and cylindrical : eyes lunar : body glabrous : upper wings folded in each sex : sting pungent, and concealed in the abdomen.

* Lip compressed, rounded and longer than the jaw. *Philanthus Fabr.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Black : thorax spotted : abdomen yellow, with the edges of the segments and tail black.

PHILANTHUS FLAVIPES : niger thorace maculato, abdomine flavo : segmentorum marginibus anoque nigris. *Fabr. Ent. Syst. T. 2. p. 290. n. 7.*—CRABRO FLAVIPES. *Fabr. Mant. Inf. I. 295. 8.*

Described by Fabricius as a native of Italy, where it appears to be a rare insect ; it is likewise found in Germany and England, but is not common in either country.

PLATE

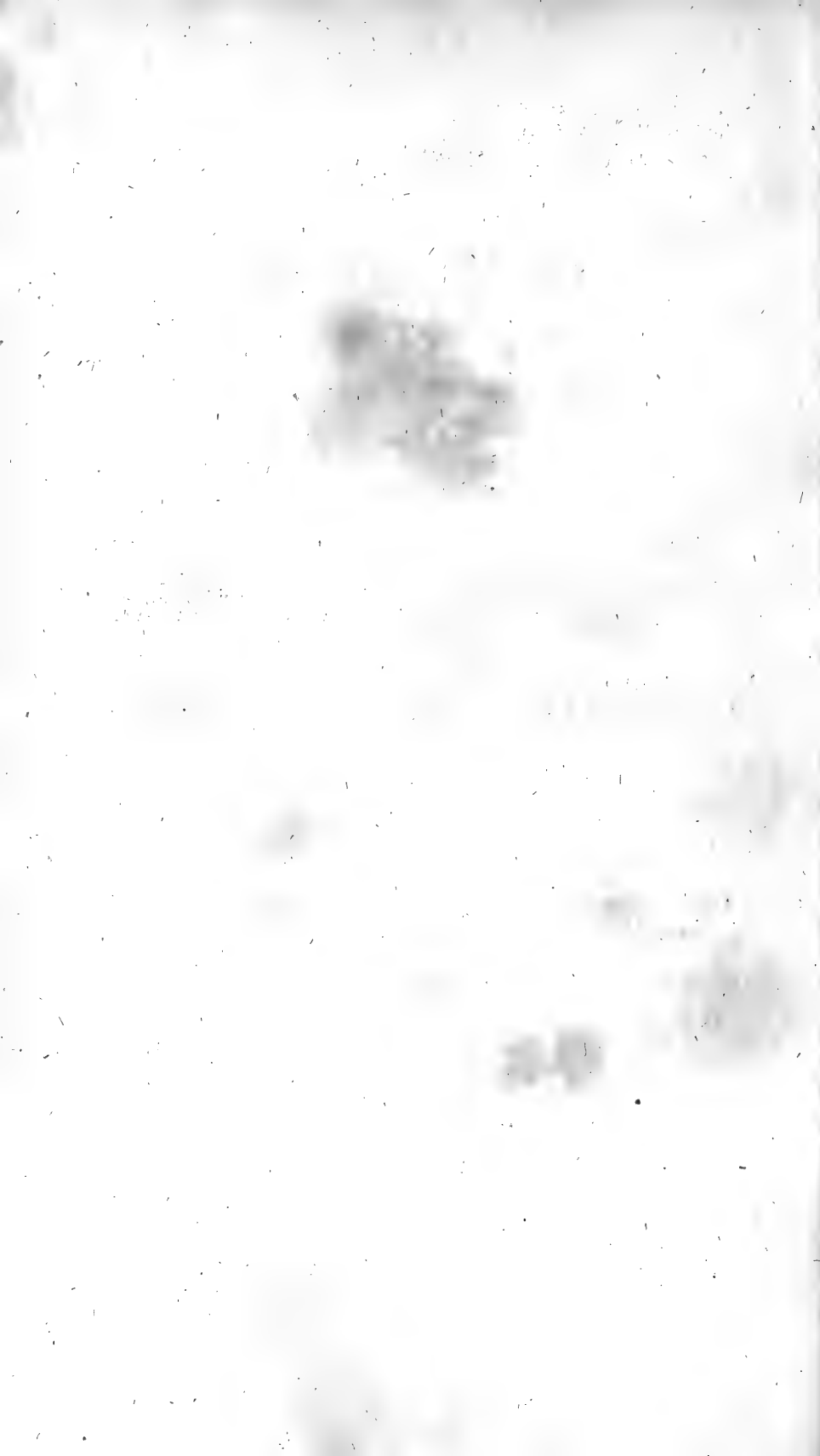




PLATE CCCCLXIII.

PHALÆNA QUADRIPISTULATA.

FOUR SPOT HEATH MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the base : wings in general deflected when at rest : fly by night.

SPECIFIC CHARACTER.

PHALÆNA QUADRIPISTULATA. Wings scalloped, greyish glossed with purple, and speckled: a small whitish spot in the middle of each wing, and a common irregular line of dots behind.

An elegant and very rare species of the Geometra family with fetaceous antennæ. This we discovered some years ago upon a sandy plain close to the Severn sea in the county of Glamorganshire, between Newton and Kenfig.

This Insect was taken in the winged state the last week in July, and was observed to fly in the open day, just skimming the surface of the scanty herbage on the sands. Its flight was amazingly rapid.

PLATE

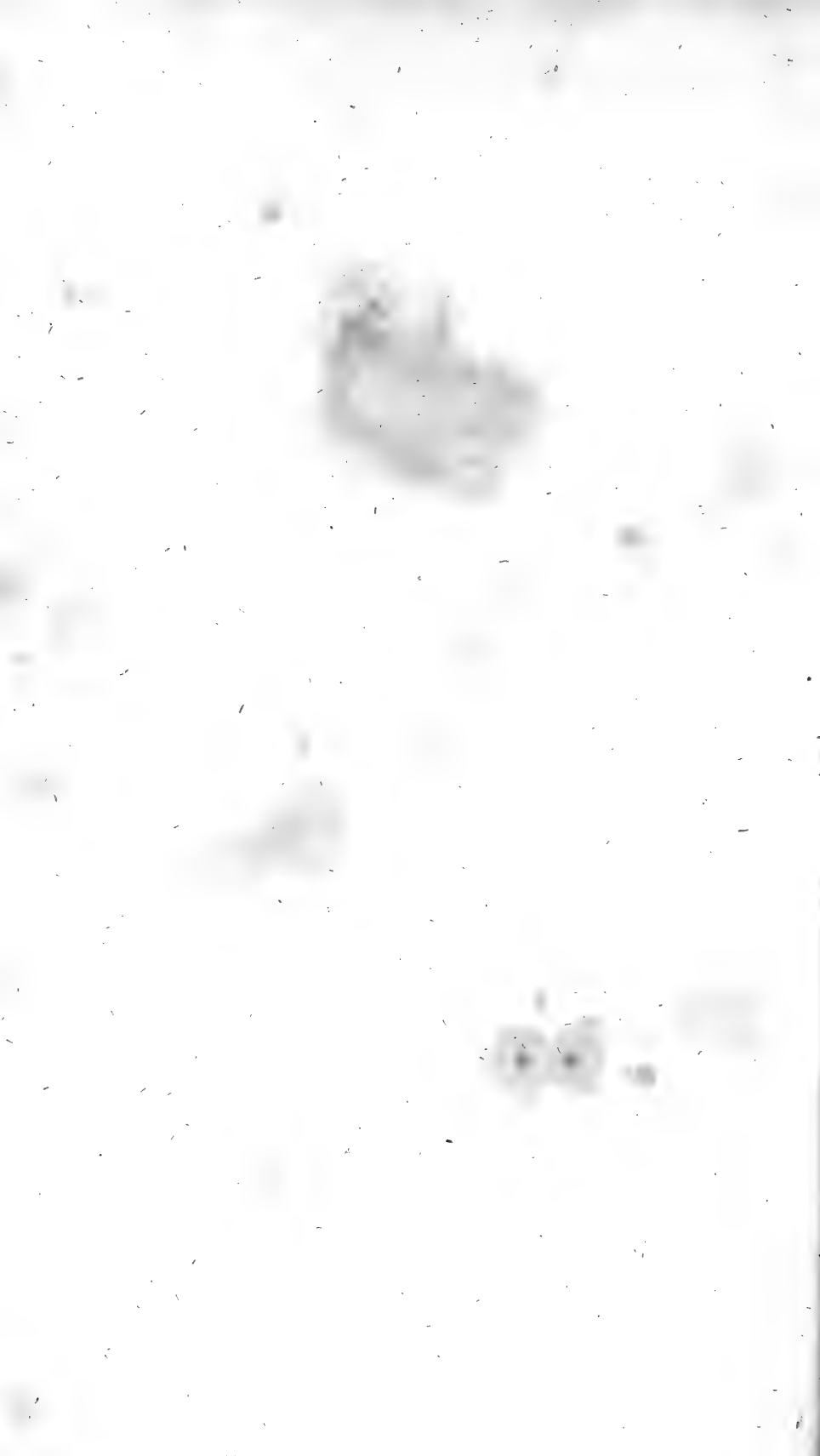




PLATE CCCCLXIV.

APIS VESTALIS.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in the females subclavated: wings flat: sting of the females and neuters pungent and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black, hairy, tail white with black tip: thorax at the base yellow.

APIS VESTALIS: atra, hirsuta, ano albo, apice nigro; thorace basi flavo. *Kirby Ap. Angl. v. 2. p. 347. n. 95.*

Geoffr. Hist. Inf. Par. 2. p. 419. n. 26.

APIS VESTALIS. *Fourcroy Ent. Par. n. 26.*

The upper figure in the annexed plate represents the male, the lower the female, of this curious species; and both are shewn in their natural size. The female is largest, and may be furthermore distinguished by having the fulvous band at the anterior part of the thorax as well as the white fascia at the posterior part of the abdomen broader than in the other sex. The white abdominal band in the female is

somewhat interrupted by the black space at the tail pointing upwards, in the male its breadth is uniform throughout.

Mr. Kirby observes that *Apis vestalis* is one of the *Bombinatrices*, which like *A. campestris* and *Barbutella* have no instruments for carrying or preparing masses of pollen. The posterior tibiæ, of one specimen in his cabinet is covered from one end to the other with a thin coat of pale earth, mixed with particles of sand, which it is probable they employ in constructing their nests or cells. The species was known to Geoffroy, who describes it with accuracy except that he does not notice the black extremity of the vent*. The species is found on flowers in the summer.

* " Cette grande espèce est noire. Le haut ou la base de son corcelet a une bande de poils jaunes citrons. Les deux tiers supérieurs du ventre sont noirs, ensuite il y a quelques poils jaunes, et son extrémité est blanche."

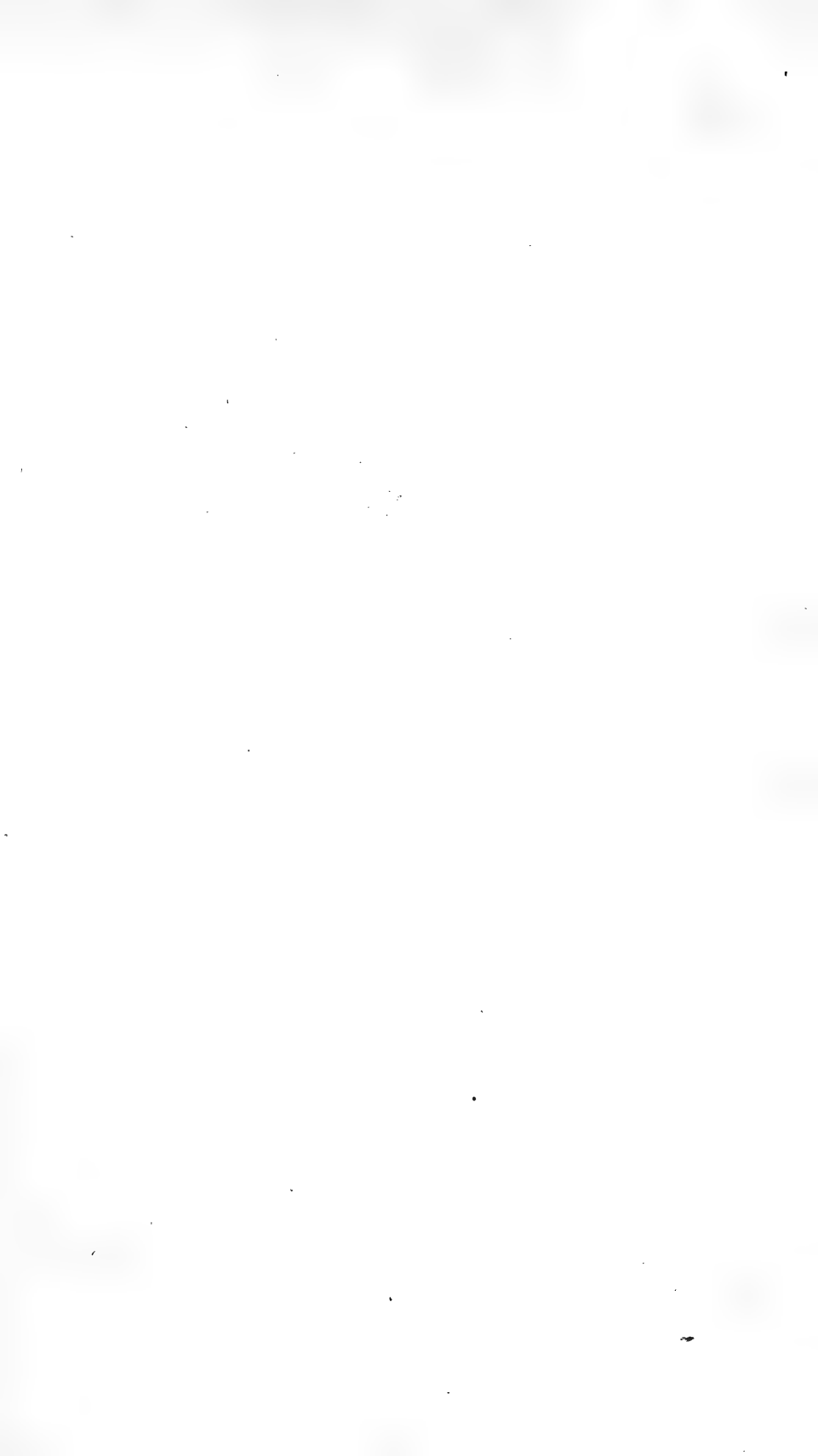




PLATE CCCCLXV.

MUSCA CINGULATA.

YELLOW GIRDLED MUSCA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis and two equal lips :
sucker furnished with bristles : feelers two, very short or sometimes
none : antennæ generally short.

SPECIFIC CHARACTER.

MUSCA CINGULATA. Deep velvety black with a single yellow zone
on the first joint of the abdomen : legs yellowish,
extreme half of the thighs black.



Taken, though not in abundance, in the month of July, on the
hedges near the road-side about Nutfield in Surrey. The smallest
figure, No. I. exhibits the natural size.

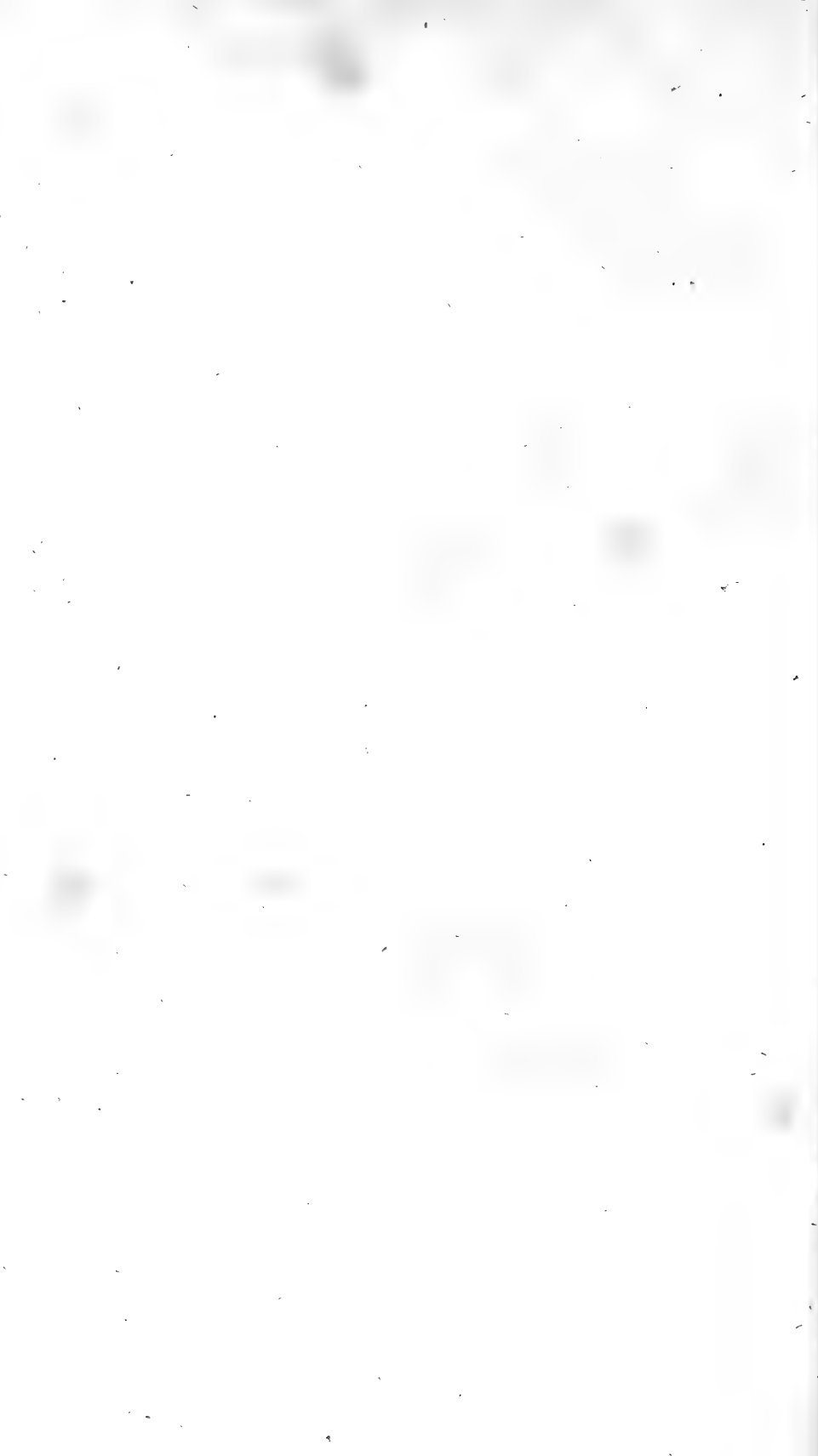




PLATE CCCCLXVI.

PAPILIO PHLÆAS.

COMMON COPPER BUTTERFLY.

GENERIC CHARACTER.

Antennæ terminating in a club: wings erect when at rest. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings sub-entire, coppery fulvous spotted with black, beneath hoary.

PAPILIO PHLÆAS: alis subintegris fulvis nigro punctatis subtus canescentibus. *Linn. Fn. Succ.* 1078.—*Gmel. Linn. Syst. Nat. I.* 2258.

HESTERIA PHLÆAS. *Fabr. Ent. Syst.* 311. 178.—*Spec. Inf.* 126. 570.

Petiv. Mus. 24. n. 317.

Raj. Inf. p. 125. n. 20.

Roef. inf. 3. t. 45. f. 5. 6.

Geoffr. inf. p. 2. p. 65. n. 36.

Schæff. Icon. 143. 3. 4.

This splendid little species of Butterfly, is one of the most familiar kinds, being very common in almost every field and meadow, and delighting

lighting in sunny situations among the hedges on the road sides, or the most frequented foot paths, where it cannot easily escape the attention of the most casual observer.

The general colour on the upper surface is fulvous richly glossed with a metallic lustre, and finely relieved with a great number of black spots, which contribute to render its appearance when exposed to the vigorous rays of sunshine equally brilliant and diversified. Its larva and pupa seem to be unknown; in the winged state it appears very common from April till the end of August.



PLATE CCCCLXVII.

FIG. I. I.

MUSCA VIBRANS.

VIBRATORY FLY.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis and two equal lips : sucker furnished with bristles : feelers two, very short, or sometimes none : antennæ generally short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings hyaline with the tip black : head red.

MUSCA VIBRANS : alis hyalinis apice nigris, capite rubro. *Linn. Fn. Suec.* 1867.—*Degeer. Inf.* 6. p. 32. n. 11. t. 1. f. 19.



Found about trees, and distinguished in its flight by the brisk vibratory motion of its wings.

The figure resting on the leaf in the annexed plate denotes the natural size, that in the upper part of the plate its magnified appearance.

FIG.

FIG. II. II.

MUSCA QUADRISTRIGATA.

FOUR STREAKED FLY.

SPECIFIC CHARACTER.

MUSCA QUADRISTRIGATA. Brown: band furrounding the eyes, four streaks on the thorax, and scutel yellow.



A minute species represented in its natural size by the smallest figure in the lower part of the plate. Its magnified appearance is shewn below.



PLATE CCCCLXVIII.

FIG. I.

VESPA FLAVICINCTA.

YELLOW BANDED WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaws compressed: feelers four, unequal: antennæ filiform, with the first joint long and cylindrical: eyes lunate: body glabrous: sting pungent, and concealed: upper wings folded in both sexes.

SPECIFIC CHARACTER.

VESPA FLAVICINCTA. Antennæ yellow, the extreme half black: head and thorax black, with yellow scutellum: abdomen black banded with yellow.



A specimen of this insect occurs in the cabinet of Mr. Drury, without any information relative to its capture. It is a species of the middle size as appears from the figure in the upper part of our plate, which exhibits the natural size. This insect is not noticed in the works of any writer that we are acquainted with.

F I G. I I.

A M M O P H I L A A R E N A R I A.

L O N G W I N G E D S A N D - W A S P.

G E N E R I C C H A R A C T E R.

Snout conic, inflected, concealing a bifid retractile tubular tongue; jaws forcipated, and three toothed at the tip: antennæ filiform in each sex, and consisting of about fourteen joints: eyes oval: wings flat: sting pungent and concealed in the abdomen.

S P E C I F I C C H A R A C T E R

A N D

S Y N O N Y M S.

Black: petiole of a single articulation, and with the first three joints rufous: wings length of the body.

S P H E X A R E N A R I A : hirta nigra abdominis petiolo uniarticulato: segmento secundo tertioque rufis, alis longitudine corporis. *Fabr. Ent. Syst. T. 2. p. 199. n. 2. Linn. Transf. 4. p. 206.*



Distinguished from *Sphex sabulosa* to which it seems at first glance nearly allied by the shortness of the petiole which connects the body to the thorax, that part being remarkably long, and consisting of two joints in the above mentioned species. Like that Insect *Ammophila arenaria*, inhabits sandy places, and appears most lively in the sun shine.—The figure in the lower part of the annexed plate represents this insect in its natural size.

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L 2

Phalæna

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Plate 455, Vespa sexcincta.

Line 3, for *Six-bellied Wasp*, read *Six-belted Wasp*.



